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J-302 386DX/486DLC CACHE MAIN BOARD USER'S MANUAL (EDITION II)

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Chapter1: Introduction

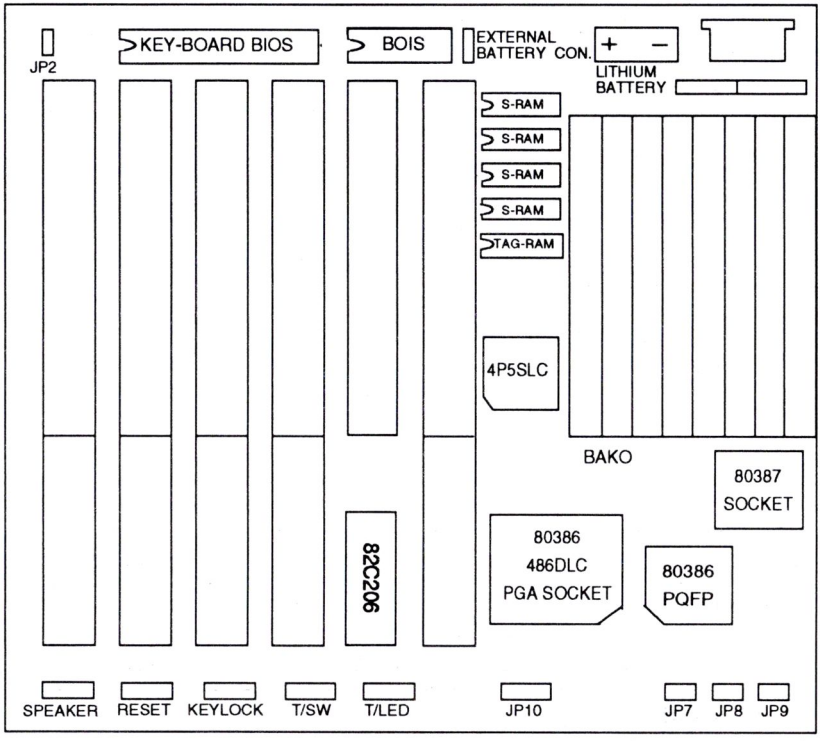
Congratulation on purchase of you New 386DX/486DLC CACHE M/B

The 386DX/486DLC cache M/B is a two chip solution offer optimal performance for 386DX or 486DLC system running ON 33 and 40 MHz. It support 386DX & 486DLC processor.

Specification

Processor: 80386DX, 486DLC
CPU clock: 33/40 MHz
CPU clock source: Clock generator
Memory : Up to 64MB
Memory configuration: 1MB/2MB/4MB/5MB/8MB/16MB/20MB/32MB/64MB
Memory using: 256KB/1MB/4MB/16MB RAM Module
Cahe Ram configuration: 128KB
BIOS type: AMI ROM BIOS/AWARD ROM BIOS
I/O slot: Five 16-bit & ONE 8-bit ISA Slot
Dimension: 22 x 17 cm

Main Board Physical Layout



Chapter 2: Installation

BEFORE TURNING ON THE SYSTEM POWER, PLEASE FOLLOW THE FOLLOWING INSTRUCTIONS CAREFULLY OR YOUR SYSTEM MAY NOT OPERATE CORRECTLY. THANK YOU!!

On board RAM installation

The 386DX/486DLC cache M/B can be expanded memory from 1MB to 64MB. Either 256KB, 1MB or 4MB or 16MB RAM module can be used on the 386DX/486DLC cache M/B.

RAM module DRAM on the motherboard consists of BANK 0 & 1. When you install the DRAM on the main board, first completely fill BANK 0, then fill BANK 1. The spaces of Bank 0 should be fully occupied, otherwise the main board will not work.

• RAM module BANK installed:

BANK 0	BANK 1	TOTAL MEMORY
256KB × 4PCS		1MB
256KB × 4PCS	256KB × 4PCS	2MB
1MB × 4PCS		4MB
256KB × 4PCS	1MB × 4PCS	5MB
1MB × 4PCS	1MB × 4PCS	8MB
4MB × 4PCS		16MB
1MB × 4PCS	4MB × 4PCS	20MB
4MB × 4PCS	4MB × 4PCS	32MB
16MB × 4PCS		64MB

RAM module on board position

Please refer to the table for the BANK 0 and BANK 1 position

BANK 0 INSTALL	U7, U8, U9, U10
BANK 1 INSTALL	U11, U12, U13, U14

CPU Installation

The 386DX/486DLC CACHE M/B it can use 80386DX-33 OR 40 MHz & 486DLC-33 OR 40 MHz, the table below show the jumper setting for CPU clock.

	JP7	JP8	JP9
33 MHz	OP	CL	OP
40 MHz	CL	CL	OP

386DX Upgraded to 486DLC System

The 386DX/486DLC CACHE M/B it can upgraded from 386DX to 486DLC, when the system use 386DX PQFP CPU, if you want to upgrade to 486DLC. You just install the 486DLC CPU To MAIN BOARD PGA SOCKET and adjusting. JP3 to close position.

Chapter 3: Connector Description

Power Supply Connectors

If you are installing the 386DX/486DLC CACHE M/B yourself, the final step is attaching the power supply cable to the motherboard POWER CON. which are located in the upper right quadrant of the board. There are some cables on the power supply.

The table below lists the voltages provided to the motherboard by the power supply output connectors.

Pin No.	Output Voltages
1	Power Good
2	+5V
3	+12V
4	-12V
5	GND
6	GND
1	GND
2	GND
3	-5V
4	+5V
5	+5V
6	+5V

Keyboard Connector

The 386DX/486DLC CACHE M/B has a standard keyboard connection port at the rear of the board.

Pin configurations and signal assignments are shown in the figures below:

Pin No.	Signal Name
1	Clock
2	Data
3	NC
4	GND
5	VCC (+5V)

External Battery Connector: J1

J1 on the motherboard is the connector used for the external battery pack. The battery pack connected should range from +4.5V to +6V DC and should never be less than +3.5V DC for proper operation.

The pinouts for the connector are listed below:

Pin No.	Assignment
1	DC Input
2	NC
3	GND
4	GND

Keylock Connector (J16)

J16 is used to connector the keylock connector on the front panel of the case.

Pin assignments are as follows:

Pin No.	Assignment
1	Power Led Anode
2	NC
3	GND
4	Keylock
5	GND

Speaker Connector: (JP4)

Speaker connector JP4 is used to connect the speaker to the system board.

Pin assignments are as follows:

Pin No.	Assignment
1	Speaker Out
2	NC
3	NC
4	+5V

Turbo Switch (JP4) & Turbo Led (JP5)

This feature enables and disables a toggle switch within the system which is able to change the system speed. When the switch is ON, the system speed is in the fast Turbo Mode. When the switch is OFF it is in the Normal Mode.

Turbo Switch	Turbo LED	Speed
Short	Light On	Turbo
Open	Ligh Off	Normal

Reset Connector (S1)

Reset Switch S1 is used to connect the reset switch to restart the system.

Pin assignments are as follows:

Pin No.	Assignment
1	Reset strobe
2	GND

CMOS RAM Discharge Jumper (JP1)

The factory setting shorts Pin 2 and Pin 3 of jumper JP2 for Battery Charge Mode.

JP1	Battery
1-2	Discharge
2-3	Charge

Monitor Display Setting (JP2)

JP2	Monitor
CL	Color
OP	Monochrome

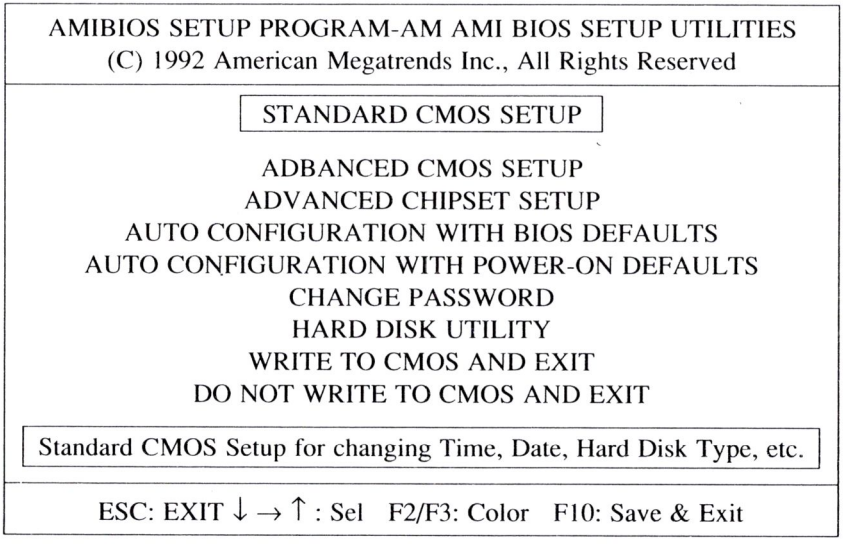
Chapter4: AMI BIOS Setup

AMI BIOS System configuration Setup

This section will tell you how to set up the system configurations (CMOS) under the AMI BIOS. After booting the system and testing the memory.

The SETUP program is contained in the system's Read-Only-Memory Rather than on a diskette.

To enter SETUP, press the "DEL" key. The following menu appears:


AMIBIOS SETUP PROGRAM-AM AMI BIOS SETUP UTILITIES
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STANDARD CMOS SETUP
ADBANCED CMOS SETUP
ADVANCED CHIPSET SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT
Standard CMOS Setup for changing Time, Date, Hard Disk Type, etc.
ESC: EXIT ↓ → ↑ : Sel F2/F3: Color F10: Save & Exit

Please enter "STANDARD CMOS SETUP" to enter the next screen.
The following pages show simple charts and instructions for the CMOS setup.

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Improper Use of Setup may Cause Problems!!

If System Hangs, Reboot System and Enter Setup by Pressing the ⟨DEL⟩ key

Do any of the following After Entering Setup
(i) Alter Options to make System Work
(ii) Load BIOS Setup Defaults
(iii) Load Power-on Defaults

Hit "ESC" to Stop now, Any other Key to Continue
Hit "ESC" to Stop now, Any other Key to Continue

AMIBIOS SETUP PROGRAM – STANDARD COMOS SETUP
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Date (mm/date/year) : Wed, Jul 01 1992
Time (hour/min/sec) : 19:35:25

Base memory size : 640 KB
Ext. memory size : 3072 KB

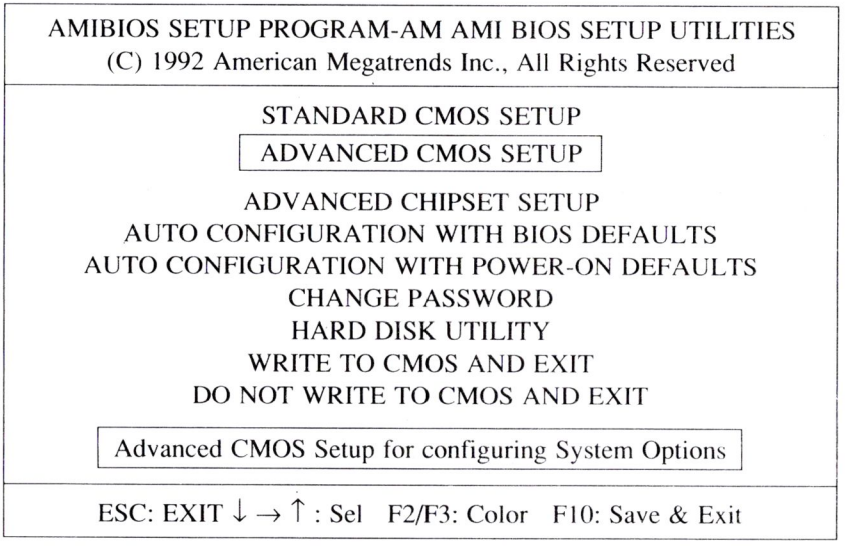
Cyln	Head	WPcom	LZone	Sect	Size
615	8	128	615	17	41MB

Hard disk C:type : 37
Hard disk D:type : Not Installed
Floppy drive A: : 1.2 MB, 5 1/4"
Floppy drive B: : Not Installed
Primary display : Monochrome
Keyboard : Installed

Month : Jan, Feb.....Dec
Date : 01 02 03.....31
Year : 1901, 1902.....2099

Sat	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

ESC: Exit ↓→↑ : Select F2/F3: Color PU/PD: Modify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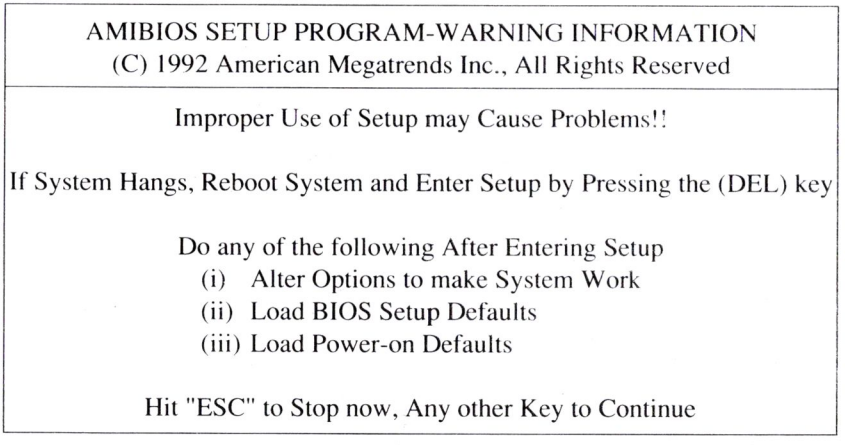
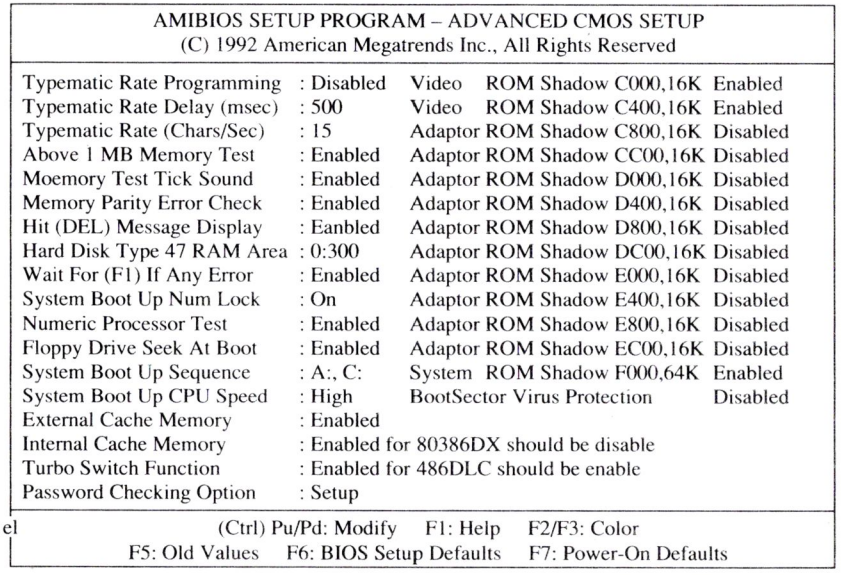
STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT
Advanced CMOS Setup for configuring System Options
ESC: EXIT ↓ → ↑ : Sel F2/F3: Color F10: Save & Exit


AMIBIOS SETUP PROGRAM-WARNING INFORMATION
(C) 1992 American Megatrends Inc., All Rights Reserved
Improper Use of Setup may Cause Problems!!
If System Hangs, Reboot System and Enter Setup by Pressing the (DEL) key
Do any of the following After Entering Setup
(i) Alter Options to make System Work
(ii) Load BIOS Setup Defaults
(iii) Load Power-on Defaults
Hit "ESC" to Stop now, Any other Key to Continue



AMIBIOS SETUP PROGRAM – ADVANCED CMOS SETUP
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Typematic Rate Programming	: Disabled	Video ROM Shadow C000,16K	Enabled
Typematic Rate Delay (msec)	: 500	Video ROM Shadow C400,16K	Enabled
Typematic Rate (Chars/Sec)	: 15	Adaptor ROM Shadow C800,16K	Disabled
Above 1 MB Memory Test	: Enabled	Adaptor ROM Shadow CC00,16K	Disabled
Moemory Test Tick Sound	: Enabled	Adaptor ROM Shadow D000,16K	Disabled
Memory Parity Error Check	: Enabled	Adaptor ROM Shadow D400,16K	Disabled
Hit (DEL) Message Display	: Eanbled	Adaptor ROM Shadow D800,16K	Disabled
Hard Disk Type 47 RAM Area	: 0:300	Adaptor ROM Shadow DC00,16K	Disabled
Wait For (F1) If Any Error	: Enabled	Adaptor ROM Shadow E000,16K	Disabled
System Boot Up Num Lock	: On	Adaptor ROM Shadow E400,16K	Disabled
Numeric Processor Test	: Enabled	Adaptor ROM Shadow E800,16K	Disabled
Floppy Drive Seek At Boot	: Enabled	Adaptor ROM Shadow EC00,16K	Disabled
System Boot Up Sequence	: A:, C:	System ROM Shadow F000,64K	Enabled
System Boot Up CPU Speed	: High	BootSector Virus Protection	Disabled
External Cache Memory	: Enabled		
Internal Cache Memory	: Enabled for 80386DX should be disable		
Turbo Switch Function	: Enabled for 486DLC should be enable		
Password Checking Option	: Setup		

el (Ctrl) Pu/Pd: Modify F1: Help F2/F3: Color
F5: Old Values F6: BIOS Setup Defaults F7: Power-On Defaults

AMIBIOS SETUP PROGRAM – AMI BIOS SETUP UTILITIES
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STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP

AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

Advanced Chipset Setup for Contiquare and Chipset Registering

ESC: EXIT ↓ → ↑ : Sel F2/F3: Color F10: Save & Exit

AMIBIOS SETUP PROGRAM-WARNING INFORMATION
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Improper Use of Setup may Casuse Problems!!

If System Hangs, Reboot System and Enter Setup by Pressing the (DEL) key

Do any of the following After Entering Setup
(i) Alter Options to make System Work
(ii) Load BIOS Setup Defaults
(iii) Load Power-on Defaults

Hit "ESC" to Stop now, Any other Key to Continue

AMIBIOS SETUP PROGRAM – ADVANCED CHIPSET SETUP
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Hidden Refresh	: Enabled
AT BUS Clock Selection	: CLKI/5 33 MHz Should be 4, 40 MHz Should be 5
Memory Read Wait State	: 1 W/S
Memory Write Wait State	: 1 W/S
Cache Read Cycle	: 2 -1-1-1
Cache Write Wait State	: 1 W/S
Non-Cacheable Block-1 Size	: Disabled
Non-Cacheable Block-1 Base	: 0 KB
Non-Cacheable Block-2 Size	: Disabled
Non-Cacheable Block-2 Base	: 0 KB
Cacheable RAM Address Range	: 16 MB
Video BIOS Area Cacheable	: Yes

el (Ctrl) Pu/Pd: Modify F1: Help F2/F3: Color
F5: Old Values F6: BIOS Setup Defaults F7: Power-On Defaults

Alternative System speed

SOFTWARE SWITCH:

FOR AMI BIOS:

After booting the system. Press "CTRL" + "ALT" + "+" at the same time to select low-speed, Press "CTRL" + "ALT" + "-" at the same time to select high-speed.

Please review the following configuration:

CPU SPEED NORMAL	KEYBOARD "CTRL" + "ALT" + "+"	CPU SPEED TURBO
CPU SPEED TURBO	"CTRL" + "ALT" + "-"	CPU SPEED NORMAL

Chapter 5: Award BIOS Setup

Award BIOS Feature

- IDE HDD AUTO Detection
- 2.88 floppy Disk Drive Support
- Quick Post
- IDE HDD Block Mode
- 2 User Type HDD
- Gate A20 Option
- Addition Information for quick reference Jumper setting
- HDD Low-level Format
- Virus Warning Feature

Entering Setup

Power on the computer and press (Del) immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), Press (Del) key or simultaneously press (Ctrl), (Alt), and (Esc) keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously press (Ctrl), (Alt), and (Delete) keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS F1 TO CONTINUE, CTRL-ALT-ESC
OR DEL TO ENTER SETUP

The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press (Enter) to accept or enter the sub-menu.

Main Menu

ROM ISA BIOS (1XXXXXXX)
CMOS Setup Utility
Award Software, Inc.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVE
	ADDITIONAL INFORMATION
Esc: Quit	↓↑→←: Select Item
F10: save & Exit Setup	F2 : Change Color
Time, Date, Hard Disk Type...	

Standard CMOS Setup Menu.

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the (PgUp) or (PgDn) keys to select the value you want in each item.

Standard CMOS Setup Menu

ROM ISA BIOS (1XXXXXXX)
CMOS Setup Utility
Award Software, Inc.

Date	: Mon, 01 Jan 1992					
Time	: 00:00:00					
Daylight saving	: Disabled					
		Cyls.	Heads	Precomp	Landzone	Sectors
Drive C	: 10 (20MB)	820	3	None	820	17
Drive D	: 35 (110MB)	1024	13	None	1023	17
Drive A	: 1.2MB, 5-1/4 in.					
Drive B	: 1.44MB, 3-1/2 in.					
Video	: EGA/VGA					
Halt on Error	: All Errors					

Base Memory:	640K
Extended Memory:	1024K
Expanded Memory:	0K
Other Memory:	384K
Total Memory:	2048K

Esc : Quit	↓↑→← : Select Item	PgUp/PgDn	Modify
F1 : Help	F2 : Change Color	F3	Calendar

ROM ISA BIOS (2136000)
BIOS FEATURES SETUP
Award Software, Inc.

Virus Warning	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power on Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A, C	D4000-D7FFF Shadow	: Disabled
Boot up Floppy Seek	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot up Num Lock Status	: On	DC000-DFFFF Shadow	: Disabled
Boot up System Speed	: High	E0000-E3FFF Shadow	: Disabled
IDE HDD Block Mode	: Disabled	E4000-E7FFF Shadow	: Disabled
Gate A20 Option	: Normal	E8000-EBFFF Shadow	: Disabled
Memory Parity Check	: Enabled	FC000-EFFFF Shadow	: Disabled
Typematic Rate Setting	: Disabled	Esc : Quit	↓↑→← : Select Item
Typematic Rate (chars/sec)	: 6	F1 : Help	Pu/PD/+/- : Modify
Typematic Delay (Msec)	: 250	F5 : Old Values (Shift) F2: Color	
Security Option	: Setup	F6 : Load BIOS Defaults	
		F7 : Load SETUP Defaults	

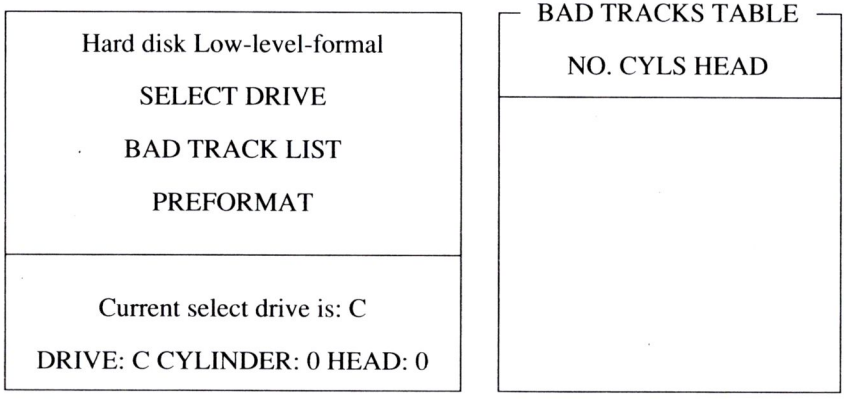
ROM ISA BIOS (2136000)
CHIPSET FEATURES SETUP
Award Software, Inc.

AUTO Configuration	: Enabled	
AT Clock Selection	: CLK I/5	
DRAM Read Wait State	: 1 WS	
DRAM Write Wait State	: 1 WS	
Speed Up DRAM Access	: Enabled	
CAS Delay By 1T State	: Enabled	
Hidden Refresh Option	: Enabled	
Fast AT Cycle	: Enabled	
Single ALE Control	: Disabled	
Back To Back I/O Delay	: Enabled	
Burst Wait State	: 2 WS	
CACHE Read Burst Cycle	: 2-1-1-1	Esc : Quit ↓↑→← : Select Item
CACHE Write State	: 1 WS	F1 : Help Pu/PD/+/- : Modify
CA32S Inactive Delay at	: Middle of T2	F5 : Old Values (Shift) F2: Color
Video BIOS Cachable	: Enabled	F6 : Load BIOS Defaults
		F7 : Load SETUP Defaults

Hard Disk Low Level Format Utility

This Award Low-Level-Format Utility is designed as a tool to save your time formatting your hard disk. The Utility automatically looks for the necessary information of the drive you selected. The Utility also searches for bad track and list them for your reference.

Shown below is the Main Menu after you enter into Award Low-Level-Format Utility.



	CYLINDERS	HEADS	SECTORS	PRECOMP	LANDZONE
Drive C: 40Mb	977	5	17	300	977
Drive D: None	0	0	0	0	0

Up/Down-Select item Enter-Accept ESC-Exit/Abort

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